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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/712,194	11/15/2000	Allen Louis Gorin	AT&T 2000-0110A	8105
23838	7590	09/10/2004	EXAMINER	
KENYON & KENYON 1500 K STREET, N.W., SUITE 700 WASHINGTON, DC 20005			KNEPPER, DAVID D	
			ART UNIT	PAPER NUMBER
			2654	

DATE MAILED: 09/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/712,194	<b>Applicant(s)</b> GORIN ET AL.	
	<b>Examiner</b> David D. Knepper	<b>Art Unit</b> 2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 01 Mar 2001, 07 Jun 2001, and 8 Apr 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3 sheets (dates above)</u> | 6) <input type="checkbox"/> Other: _____  |

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1. Applicant's correspondence filed on 1 March 2001, 7 June 2001, and 8 April 2003 (IDS papers) has been received and considered. Claims 1-31 are pending.

#### **Abstract**

2. The Abstract of the Disclosure is objected to because it is too long. An abstract must be limited to 150 words. Correction is required. See M.P.E.P. § 608.01(b).

#### **Priority Claims**

3. The applicant(s) should check their filing receipts and/or the Patent Application Information Retrieval (PAIR) system for the acknowledgment of their **domestic** priority or benefit claims (if any) under 35 USC 119(e), 120 or 121 (37 CFR 1.78).

#### **Specification**

4. The disclosure is objected to because of the following informalities:  
Appropriate correction is required.

#### **Claims**

5. Claims 1-28 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The preamble of the claims indicates the invention is for "predicting problems". However, the body of the claims indicate that the true invention is to analyze input in order to conduct a "successful dialog".

The language of the claims (see claims 1, 15 and 28, for example) indicates that a successful dialog only requires processing and routing of the user's input. However, the specification indicates that this will happen even if the dialog is not successful because the analysis of the input requires routing of the input data.

Claim 12: The "storing" function does not seem to have any impact on the "method of predicting problems". The claim indicates that only the "first dialog exchange" is stored which is contrary to the specification. No specific teaching for making storage conditional is taught or claimed. It is presumed that the omission of storing additional dialogs was unintentional and that all dialogs would be recorded as is taught in the prior art to gather data for research.

Claim 13 is redundant over the "determining" steps of claims 1 and 12 which have already determined the probability for both dialog exchanges.

Claim 14: It is unclear how the steps of method claim 14 are interconnected with the single step of claim 1. For example, it is not clear how the recognizing and providing steps can be performed after the determining step of claim 1. It seems that these steps should be conducted before the determining step and that there should be some particular relationship between the three that indicates how they would affect an outcome for detecting a problem.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole

would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 1, 3-11, 14-16, 18-23 and 29 are rejected under 35 U.S.C. 103 as being unpatentable over Horvitz (6,490,698) in view of Horvitz (6,421,655).

It is noted that Horvitz ('698) explicitly incorporates Horvitz ('655) by reference in column I, lines 6-11.

As per claims 1, 16, "predicting problematic dialogs" is taught or suggested with his conversation control, col. 2:

"determining whether a task classification decision can be made" (Horvitz's ('698) teaches an example task of getting a shuttle for a customer who needs to go somewhere, see columns 6 and 9 - see also Horvitz ('655) column 5, lines 44-50 who teaches that using a task abstraction hierarchy is well known for the purpose of understanding a user's goals to provide for conversational computer-user interaction);

"if the task classification decision cannot be made, the method comprises: determining whether a probability of conducting a successful dialog with the user exceeds a first threshold" (Horvitz's ('698) inference probabilities exceeding or not exceeding certain thresholds, col. 10, lines 54-55, suggests the determination of "further dialog" with his cooperative behavior in dialog, col. 9, lines 19-20, further described as can be appreciated by those of ordinary skill within the art, this is one specific decision-analytic manner of what can be referred to as the computation of ideal action ("successful dialog") under uncertainty, given the consideration of the utilities associated with each outcome).

It is noted that Horvitz ('698) does not teach details about the relationship of the probability "threshold" to dialog control. Horvitz ('655) shows details for performing probability analysis regarding the use of a "threshold" in columns 12-13. Horvitz ('655) explicitly teaches details about the cooperative behavior in dialog noted above in Horvitz ('698) which shows that exceeding a particular threshold will allow continuing dialog. Therefore it is obvious that Horvitz will perform "further dialog" based on a threshold analysis to act as a dialog manager.

It is also noted that Horvitz ('698) does not explicitly teach "if the task classification decision cannot be made". However, Horvitz ('698) indicates that the probabilities calculation and threshold comparison will be made with greater certainty if the task is properly identified and Horvitz ('655) explicitly teaches that probability decisions are hierarchically made in order to get as much information correctly identified as possible. Thus, it would have been obvious regardless of the certainty at which the initial task is identified, to continue a dialog in order to get even more information to achieve success.

Claim 3-5, 18, 19, 20: Using more than one threshold is taught in figures 4(a) and 4(b) of Horvitz ('698). Different threshold comparisons result in adapting the dialog in different ways as explained in column 9. Horvitz ('655) teaches details for using multiple thresholds in columns 12-13.

Claims 6-7, 21: The use of "nonverbal communications" are taught by his list of known computer input devices to include keyboard 40 and pointing device 42 ... joystick, game pad, satellite dish, scanner, or the like, col. 4, lines 53-56, Horvitz ('698). See also figure 6 of ('655).

Claim 8, 22: Using the system for "customer care" is anticipated with his example of

getting a shuttle for a customer who needs to go somewhere (see columns 6 and 9, Horvitz ('698)).

Claim 9, 23, 29 and 30: Horvitz ('655) teaches "understanding" in column 5, lines 44-50 that the detailed analysis noted above is performed for the purpose of understanding a user's goals to provide for conversational computer-user interaction.

Claim 10: Probability based on a "training database" is obvious over Horvitz ('698) use of a Bayesian networks, col. 7, line 17 and his use of a shared knowledge base in col. 7, line 46. It would have been obvious to one of ordinary skill in the art that the training of the network could be done regardless of whether the data is collected over time or is already located in a database.

Claim 11: Data collected from various sources is taught by Horvitz ('655) in column 11, lines 5-17 who indicates that his information received can be of many types. Those types include speech, audio, image/video which are analyzed to determine value-of-information, col. 11, lines 25-27. The combination of these data types and the probability analysis noted above allow proper recognition, understanding and dialog control.

Claims 14, 15 and 28: To identify a task, it is clear that Horvitz ('698) will "receive the user's input", "recognize portions of the user's input" and "provide an input to the task classification decision based on applying a confidence function" in column 9. He teaches in lines 19-65 that partial recognition may still be used to supply the user with feedback in a conversational manner in order to raise the probability of successful understanding. The decision by Horvitz is based on the confidence decision as to whether or not the partial recognition is important information and a decision on proper feed back is made based on the user's input.

8. Claims 2, 17 and 31 are rejected under 35 U.S.C. § 103 as being unpatentable over Horvitz ('698 & '655) as applied to claim 1, in further view of Shipman (5,033,088).

It is noted that Horvitz does not explicitly teach "the user is routed to a human for assistance". However, Horvitz explicitly teaches that conditions that cause Advancing Activity, unexpected Termination, etc. is known but The invention is not so limited, col. 10, lines 44-46 inviting alternative solutions to be applied. Shipman teaches that a well known alternative solution In the event the speech recognition system 40 fails to recognize the callers response ... the caller's recorded response and the recognizer's proposed response or responses are presented to the human attendant, col. 2, lines 57-68. It would have been obvious for a person having ordinary skill in the pertinent art, at the time the invention was made, to correct errors or other problems that cannot be solved automatically by the computer using human intervention because Shipman teaches that this is a well known solution for speech recognition devices that have difficulty solving an automated task as noted above.

9. Claims 12, 13, 24, 25, 26 and 27 are rejected under 35 U.S.C. § 103 as being unpatentable over Horvitz ('698 & '655) as applied to claims 1 and 3-11 above in further view of Litman (Automatic Detection of Poor Speech Recognition at the Dialogue Level).

Claim 12, 13, 24, 26,: It is noted that Horvitz does not explicitly teach "storing a first dialog exchange in a dialog history database". However, he is clearly using dialog information to determine the probability of conducting a successful dialog as otherwise claimed. Litman teaches that it is common to use a collection of system logs from actual dialogues (page 309),



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databases (corpus, page 310). Therefore it would have been obvious to one of ordinary skill in the art to create a database from recordings of dialogues because Litman teaches that such databases will help improve the dialogue training process by improving recognition at the dialogue level. It is inherent that the probability would have to be calculated for each exchange of data.

Claims 25 and 27: See claims 11 and 1 above.

10. Claims 1-13, 15-27, 29 and 31 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-28, respectively of copending Application No. 09/712,192. Although the conflicting claims are not identical, they are not patentably distinct from each other because the 09/712,192 application has an obvious limitation regarding "task classification".

The "task classification" limitation does not appear in the ('192) application claims. However, this limitation is obvious in view of claims 8 and 21 ("customer care") of the ('192) application. The term "customer care" is claimed in both applications as a further limitation. In the ('192) application, it provides a general statement which is a broad category of "tasks" which provide will aid the user. In the instant application, this term also appears as a further limitation of the broader "task classification" limitation. Thus, the claims in each application are obvious over each other.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

11. Claims 14, 28 and 30 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 15, 9 and 24, respectively of copending Application No. 09/712,192 as applied to claims 8 and 21. Although the conflicting claims are not identical, they are not patentably distinct from each other because the 09/712,192 application has an obvious limitation regarding "task classification".

Claims 14, 28 and 30 are obvious over claim 15 of ('192) in view of claims 8 and 21 because claim 15 requires the dialog manager to rely on the recognition of whatever objective the user's input is attempting to communicate. Claims 8 and 21 indicate that the user's input must be interpreted as broad enough to include some desired task.

Claim 30 is obvious over claims 9 and 23 of ('192) in view of claims 8 and 21 because claims 9 and 24 require the recognition to derive from a combination that include understanding as well as the recognition of dialog that the user's input is attempting to communicate. Claims 8 and 21 indicate that the user's input must be interpreted as broad enough to include some desired task.

#### **Prior Art**

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Stolcke (Dialogue Act Modeling...) is cited to show that it is well known to provide a database with stored dialog acts that allows the application of various modeling such as known applications of Bayes' rule for probability analysis.

Jansenn (Generating User Interfaces...) is cited to also show that database storage of dialogues is well known for developing dialog controls.

13. The Declaration under 37 CFR 1.132 obviates any rejection under 102 over the reference (Automatic Prediction of Problematic Human-Computer Dialogues in How May I Help You?) since the information appears the same and authors are the inventive entities of the instant application.

The IDS statements (3 pages) have been fully considered.

14. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

TC2600 Fax Center  
(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

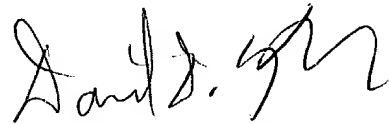
15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David D. Knepper whose telephone number is (703) 305-9644. The examiner can normally be reached on Monday-Thursday from 07:30 a.m.-6:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil, can be reached on (703) 305-9645.

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Any inquiry of a general nature or relating to the status of this application should be directed to customer service whose telephone number is (703) 306-0377.

A handwritten signature in black ink, appearing to read "David D. Knepper", with a stylized flourish at the end.

David D. Knepper  
Primary Examiner  
**Art Unit 2654**  
August 24, 2004